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10/567,574	02/08/2006	Ashleigh Glen Quick	P29151	9280

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EXAMINER	
MANOHARAN, MUTHUSWAMY GANAPATHY	
ART UNIT	PAPER NUMBER
2617	

NOTIFICATION DATE	DELIVERY MODE
09/15/2011	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/567,574	QUICK ET AL.	
	Examiner	Art Unit	
	MUTHUSWAMY MANOHARAN	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 March 2011*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

5)☒ Claim(s) *1-43* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1-43* is/are rejected.

8)☒ Claim(s) *6-9,12,18* is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

12)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 2-3, 5-9 and 11-13 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Regarding claim 2, 5 and 11 claim requires the first and second transceivers transmit an acknowledgement indicating the successful or unsuccessful receipt of the data transmitted by the repeater. However, only one transceiver is receiving the data and other transceiver is only sending the data. Therefore, only the transceiver that is receiving the data needs to send the acknowledgement and not the other. Therefore, the subject matter," the first and second transceivers transmit an acknowledgement indicating the successful or unsuccessful receipt of the data transmitted by the repeater" is not enabling as to what is being acknowledged for by the transceiver that is only transmitting the data.

Claims 3, 6-9 and 12-13 are also rejected as they depend on the rejected respective base claims.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-5, 10-11, 13 and 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brederveld et al. (hereinafter Brederveld) (US 5898679) in view of King (US 2009/0154390) and Shurmantine et al. (hereinafter Shurmantine) (US 7746804).

Regarding **claim 1**, Brederveld teaches a radio communication system comprising a first transceiver (source end station, abstract), a second transceiver (destination end station, abstract) and a repeater (relay, abstract), the method comprising:

upon receiving data from one of either the first or second transceivers, transmitting by the repeater a repeat flag to cause the transceivers to suspend further action and then transmitting by the repeater, the data received from the one of either the first or second transceivers (“R-BLEEP”, reads on repeater flag, col. 6, line 27; “the AP could selectively repeat the message transmitted by MS 120, MS 120 and MS 121 could read on first and second transceivers; col. 5, lines 40-45).

Brederveld did not teach specifically transmitting an overall acknowledge status to inform a transceiver in the system of the success or failure of receipt of the data

transmitted by the repeater. However, King teaches in an analogous art transmitting an overall acknowledge status to inform a transceiver in the system of the success or failure of receipt of the data transmitted by the repeater (ACK signal back to the original source of the wireless signal through the …repeater, P[0044]). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to transmitting an overall acknowledge status to inform a transceiver in the system of the success or failure of receipt of the data transmitted by the repeater in order to complete account of the transaction in an efficient manner.

The combination of Brederveld and King did not teach specifically transmitting an overall acknowledge to inform all transceivers in the system. However, Shurmantine teaches in an analogous art transmitting an overall acknowledge to inform all transceivers in the system(broadcast repeater status message, item 520 in Figure 12; col. 17, lines 25-30). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to use the method of transmitting an overall acknowledge to inform all transceivers in the system in order to avoid instruct the other transceivers from stop sending data packets during transmission(avoid collision).

Regarding **claim 2**, Bederveld teaches the first transceiver transmit an acknowledgement indicating the successful receipt of the data transmitted by the repeater (“if no bleep message is received the source end-station reports the status “NO TRANSFER” for the message", Col. 6, lines 49-50). Bederveld teaches the second transceivers transmit an acknowledgement indicating the successful or unsuccessful receipt of the data transmitted by the repeater (if the bridge relay does

not detect an S-Bleep the relay determines that the destination end-station did not receive the message and sets the status relay the message to “REPEAT”, col. 8, lines 35-38).

King further teaches a method wherein the transceivers transmit an acknowledgement indicating the successful or unsuccessful receipt of the data transmitted by the repeater (ACK signal back to the original source of the wireless signal through the …repeater, P[0044]).

Regarding **claim 3,** Bredveld teaches a method wherein upon receipt of the acknowledgements from each of the first and second transceivers, the repeater will transmit an overall status for the repeated transmission (report status of “no repeat”, status of the message to “repeat”, col. 8, lines 27-38)

Regarding **claim 4,** Brederveld teaches a method for transmitting and receiving data according to a frame for use in a network of devices comprising a first transceiver, a repeater, and at least one other transceiver, the method comprising: transmitting, by the first transceiver, data for each of the at least one other transceivers in a first time slot of the frame; transmitting by the repeater a repeat flag in a second time slot of the frame after the first time slot; and retransmitting by the repeater the data transmitted in the first time slot in a third time slot of the frame after the second time slot. (source end station transmits a message”, col. 5, lines 34-35, “R-BLEEP”, col. 5, line 55; col. 5, lines 54-57).

Brederveld did not teach specifically transmitting by the repeater an overall status to the network, in a last time slot after the third time slot to inform a transceiver in the

system of the success or failure of receipt of the retransmitted data. However, King teaches in an analogous art transmitting by the repeater an overall status to the network, in a last time slot after the third time slot to inform a transceiver in the system of the success or failure of receipt of the retransmitted data (ACK signal back to the original source of the wireless signal through the …repeater, P[0044]). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to transmit by the repeater an overall status to the network, in a last time slot after the third time slot to inform a transceiver in the system of the success or failure of receipt of the retransmitted data in order to complete account of the transaction in an efficient manner.

The combination of Brederveld and King did not teach specifically transmitting an overall acknowledge to inform all transceivers in the system. However, Shurmantine teaches in an analogous art transmitting an overall acknowledge to inform all transceivers in the system (broadcast repeater status message, item 520 in Figure 12; col. 17, lines 25-30). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to use the method of transmitting an overall acknowledge to inform all transceivers in the system in order to avoid instruct the other transceivers from stop sending data packets during transmission(avoid collision).

Claim 5 is rejected for the same reason as set forth in claim 2.

Regarding **claim 10,** Brederveld teaches a radio communication system comprising a first transceiver, a second transceiver and a repeater, wherein upon receiving data from one of either the first or second transceivers, in a first time slot, the

repeater transmits a repeater flag in a second time slot to cause the transceiver to suspend further action, and then in a third time slot transmits the data received in the first time slot ("R-BLEEP", reads on repeater flag, col. 6, line 27; "the AP could selectively repeat the message transmitted by MS 120, MS 120 and MS 121 could read on first and second transceivers; col. 5, lines 40-45).

Brederveld did not teach specifically transmits an overall status to all transceivers in a last time slot after the third time slot to cause the transceivers to resume further action. However, King teaches in an analogous art transmits an overall status to all transceivers in a last time slot after the third time slot to cause the transceivers to resume further action(ACK signal back to the original source of the wireless signal through the …repeater, P[0044]). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to transmit an overall status to all transceivers in a last time slot after the third time slot to cause the transceivers to resume further action in order to complete the transaction efficiently.

Claim 11 is rejected for the same reason as set forth in claim 5.

Regarding **claim 13,** Brederveld teaches a method wherein the last time slot is the fifth time slot after the fourth time slot and the overall acknowledge is status is based upon the acknowledgements received in the fourth time slot (bridge relay may report a status of NO REPEAT message, Col. 8, lines 27-38).

Regarding **claim 14,** Brederveld teaches a repeater for use in a radio communication system comprising at least two transceivers, wherein upon receiving

data in a first time slot, the repeater transmits a repeat flag in a second time slot to cause the transceivers to suspend further action, and then transmits in a third time slot, data received in the first time slot ("R-BLEEP", reads on repeater flag, col. 6, line 27; "the AP could selectively repeat the message transmitted by MS 120, MS 120 and MS 121 could read on first and second transceivers; col. 5, lines 40-45; transmit an R-BLEEP to the source end station and then repeat the message to the destination end station, col. 6, lines 30-35).

Brederveld did not teach specifically transmits in a last time slot, after the third time slot, an overall acknowledge status to inform a transceiver in the system of the success or failure of receipt of the data transmitted by the repeater. However, King teaches in an analogous art transmits in a last time slot, after the third time slot, an overall status to inform a transceiver in the system of the success or failure of receipt of the data transmitted by the repeater (ACK signal back to the original source of the wireless signal through the …repeater, P[0044]). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to transmits in a last time slot, after the third time slot, an overall status to inform a transceiver in the system of the success or failure of receipt of the data transmitted by the repeater in order to complete account of the transaction in an efficient manner.

The combination of Brederveld and King did not teach specifically transmitting an overall acknowledge to inform all transceivers in the system. However, Shurmantine teaches in an analogous art transmitting an overall acknowledge to inform all transceivers in the system (broadcast repeater status message, item 520 in Figure 12;

col. 17, lines 25-30). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to use the method of transmitting an overall acknowledge to inform all transceivers in the system in order to avoid instruct the other transceivers from stop sending data packets during transmission(avoid collision).

Claim 15 is rejected for the same reason as set forth in claims 2 and 3.

Regarding **claim 16**, Brederveld teaches a transceiver for use in a radio communication system comprising at least one other transceiver and a repeater, the transceiver and the at least one other transceiver being separated from each other by a distance greater than at least one of their respective transmitting ranges, in use, the repeater being disposed intermediate the transceiver and the at least one other transceiver, wherein upon receiving a repeat flag from the repeater, in a second time slot, the transceiver suspends further action until it receives from the repeater, in a third time slot, data that was originally transmitted by the at least one other transceiver in a first time slot, before the second time slot ("R-BLEEP", reads on repeater flag, col. 6, line 27; "the AP could selectively repeat the message transmitted by MS 120, MS 120 and MS 121 could read on first and second transceivers; col. 5, lines 40-45; transmit an R-BLEEP to the source end station and then repeat the message to the destination end station, col. 6, lines 30-35).

Brederveld did not teach specifically transmits an overall acknowledge status from the repeater in a last time slot, after the third time slot, after which the transceiver resumes normal action, wherein the overall acknowledge status informs a transceiver of the success or failure of receipt of the data from the repeater. However, King

teaches in an analogous art transmits an overall acknowledge status from the repeater in a last time slot, after the third time slot, after which the transceiver resumes normal action wherein the overall acknowledge status informs a transceiver of the success or failure of receipt of the data from the repeater(ACK signal back to the original source of the wireless signal through the …repeater, P[0044]). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to transmit an overall acknowledge status from the repeater in a last time slot, after the third time slot, after which the transceiver resumes normal action, wherein the overall acknowledge status informs a transceiver of the success or failure of receipt of the data from the repeater in order to complete the transaction efficiently.

The combination of Brederveld and King did not teach specifically transmitting an overall acknowledge to inform each of the transceivers. However, Shurmantine teaches in an analogous art transmitting an overall acknowledge to inform each of the transceivers (broadcast repeater status message, item 520 in Figure 12; col. 17, lines 25-30). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to use the method of transmitting an overall acknowledge to inform all each of the transceivers in order to avoid instruct the other transceivers from stop sending data packets during transmission(avoid collision).

Claim 17 is rejected for the same reason as set forth in claim 5.

Claims 19, 27, 35 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Song et al. (hereinafter Song) (US 2004/0146013) in view of Scott et al. (hereinafter Scott) (US 5796738).

Regarding **claim 19**, Song teaches a method for use in a radio communications system comprising at least a first transceiver, a second transceiver and a repeater, such that upon receipt of a data transmission from the first transceiver, the repeater re-transmits the data transmission from the first transceiver, wherein upon receipt of a data transmission from the second transceiver before the repeater completely receives or retransmits the data transmission from the first transceiver
(Figures 1 and 2; the repeater receives uplink transmissions from station 1050 and retransmits them to the access point 1010; When both stations 1050 and access point 1010 transmit simultaneously, the collision is resolved as described above, P[0062]).

Song did not teach specifically the repeater transmits a data sequence instructing each transceiver to cease its respective transmission.

However, Scott teaches in an analogous art wherein the repeater transmits a data sequence instructing each transceiver to cease its respective transmission(col. 3, lines 50-60). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to have the repeater transmits a data sequence instructing each transceiver to cease its respective transmission in order to prevent resolve collision. These procedures are well known in the art.

Claims 27, 35 and 37 are also rejected for the same reason as set forth in claim 19.

Claims 20-26, 28-34, 36 and 38-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Song et al. (hereinafter Song) (US 2004/0146013) in view of Scott et al. (hereinafter Scott) (US 5796738) and Molle (US 5978383).

Regarding **claim 20**, the combination of Song and Scott teaches all the particulars of the claim except a method wherein the respective transmissions of the first and second transceivers are headed by a sequence of consecutive dominant bits. However, Molle teaches in an analogous art a method wherein the respective transmissions of the first and second transceivers are headed by a sequence of consecutive dominant bits (col. 9, lines 50-53). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to use a method wherein the respective transmissions of the first and second transceivers are headed by a sequence of consecutive dominant bits in order to control collision.

Regarding **claim 21**, Scott teaches a method wherein the data sequence transmitted by the repeater begins with a sequence of dominant bits (col. 3, lines 53).

Regarding **claim 22**, Scott teaches a method further comprising upon receiving the data sequence from the repeater, causing each transceiver to cease transmitting, each transceiver will delay for a period before attempting to repeat its original transmission (backoff procedure, waits a random period of time, col. 3, line 54).

Regarding **claim 23,** Scott teaches a method wherein the delay period is calculated by each transceiver by selecting a random number and scaling the random number according to the number of bits in its respective transmission (backoff procedure, waits a random period of time, col. 3, line 54).

Regarding **claim 24**, Scott teaches a method wherein if subsequent transmission retries still collide, subsequently calculated delay periods are increased (Scott: CSMA/CD; Molle: CSMA/CD, abstract).

Regarding **claim 25,** Scott teaches a method wherein after a predetermined number of unsuccessful retries, the transceiver ceases further transmission attempts (CSMA/CD, col. 1, line 24; col. 3, lines 58-60).

Regarding **claim 26**, Scott teaches a method wherein after ceasing further transmission attempts, the network alerts an operator that further transmission attempts have ceased (CSMA/CD, col. 1, line 24; col. 3, lines 58-60).

Claims 28-34 are rejected for the same reason as set forth in claims 20-26.

Claim 36 is rejected for the same reason as set forth in claim 20.

Claims 38-43 are rejected for the same reason as set forth in claims 21-26 respectively.

Allowable Subject Matter

Claim 18 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 6-9 and 12 are allowable if rewritten to overcome the rejections under 35 U.S.C. 112, 1st paragraph, set forth in this Office action and to include all the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant's arguments with respect to claims 1-18 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's arguments with respect to claims 19-42 have been considered but they are not persuasive.

Applicant argues that no teaching that the jam signal is a data sequence that instructs each transceiver to cease its respective transmission.

Examiner respectfully disagrees. The Jam signal as taught by Scott is well known to one of ordinary skill in the art (Definition: In telecommunications Jam signal is a signal that carries a binary bit pattern sent by a data station to inform other stations that they must not transmit; also given by Molle: col. 9, line 53).

Applicant further argues that “Molle's teaching is highly specific to a wired environment and not directly applicable to a wireless environment".

Examiner respectfully disagrees. The idea of transmitting sequence of consecutive dominant bits as taught by Molle is applicable any a repeater between two hosts irrespective of whether the environment is wired or wireless(col. 9, lines 50-53). The claims are well known carrier sense multiple access with collision detection (CSMA/CD) and can be used in wireless systems that rely on sharing resources.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MUTHUSWAMY MANOHARAN whose telephone number is (571)272-5515. The examiner can normally be reached on 6:30am-2:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, George Eng can be reached on 571-272-7495. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/George Eng/
Supervisory Patent Examiner, Art Unit 2617

/MUTHUSWAMY MANOHARAN/
Examiner, Art Unit 2617

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